**NEWTON'S TELECOM DICTIONARY**

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# NEWTON's TELECOM DICTIONARY

The Official Dictionary of Telecommunications Networking and Internet

**16th and a Half Updated, Expanded and Much Improved Edition**

**Bridge Lifter** A device that removes, either electrically or physically, bridged telephone pairs. Relays, saturable inductors, and semiconductors are used as bridge lifters.

**Bridge Tap** An undetermined length of wire attached between the normal endpoints of a circuit that introduces unwanted impedance imbalances for data transmission. Also called bridging trap or bridged tap. See Bridged Tap.

**Bridged Jack** A dual position modular female jack where all pins of one jack are permanently bridged to the other jack in the same order.

**Bridged Ringing** A system where ringers on a phone line are connected across that line.

**Bridged Tap** A bridged tap is multiple appearances of the same cable pair at several distribution points. A bridged tap is any section of a cable pair not on the direct electrical path between the central office and the user's offices. A bridged tap increases the electrical loss on the pair — because a signal traveling down the pair will split its signal between the bridge and main pairs. You can't run high-speed digital circuits, e.g. T-1, over cable that has bridged taps in it. But you can run ISDN circuits over cable with a limited number of bridged taps. See Bridge and Loading Coil.

**Bridger** Bridger Amplifier. An amplifier which is connected directly into the main trunk of a CATV system, providing isolation between the main trunk and multiple (high level) outputs.

**Bridging** Bridging across a circuit is done by placing one test lead from a test set or a conductor from another circuit and placing it on one conductor of another circuit. And then doing the same thing to the second conductor. You bridge across a circuit to test the circuit by listening in on it, by dialing on it, by running tests on the line, etc. You can bridge across a circuit by going across the pair in wire, by stripping it, etc. You can bridge across a pair (also called a circuit path) by installing external devices across quick clips on a connecting block.

**Bridging Adapter** A box containing several male and female electrical connectors that allows various phones and accessories to be connected to one cable. Bridging adapters work well with 1A2 key systems and single line phones, but usually not with electronic or digital key systems and electronic or digital telephones behind PBXs.

**Bridging Clip** A small piece of metal with a U-shape cross-section which is used to connect adjacent terminals on 66-type connecting blocks.

**Bridging Connection** A parallel connection by means of which some of the signal energy in a circuit may be extracted, usually with negligible effect on the normal operation of the circuit. Most modern phone systems don't encourage bridging connections, since the negligible is rarely negligible.

**Bridging Loss** The loss at a given frequency resulting from connecting an impedance across a transmission line. Expressed as the ratio (in decibels) of the signal power delivered to that part of the system following the bridging point before bridging, to the signal power delivered to that same part after the bridging.

**Bridle Cards** Proprietary Basic Rate ISDN Dual Loop Extension that lets ISDN service be provided up to 28,000 feet away. See ISDN.

**BRIDS** Bellcore Rating Input Database System.

**Briefcase** A Windows 95 feature that allows you to keep multiple versions of a file in different computers in sync with each other.

**Brightness** An attribute of visual reception in which a source appears to emit more or less light. Since the eye is not equally sensitive to all colors, brightness cannot be a quantitative term.

**BRISC** Bell-Northern Research Reduced Instruction Set Computing.

**Brite Cards And Services** Basic Rate Interface Transmission Extension lets telephone companies extend service from ISDN-equipped central offices to conventional central offices. See ISDN.

**British Telecommunications Act** In 1981 in the U.K. this act separated telecommunications from the post office and created British Telecommunications (BT). See also Post Office Act.

**Brittle** Easily broken without much stretching.

**Broadband** 1. A WAN term. A transmission facility providing bandwidth greater than 45 Mbps (T3). Broadband systems generally are fiber optic in nature. See also Bandwidth and SONET. Contrast with Narrowband and Wideband.

2. A LAN term. A multichannel, analog, coax-based LAN. It almost defies the imagination that one would use an analog LAN for connectivity of digital computers, yet they exist. 10Broad36 is a standard for such a LAN. The real, and only, value of such an approach is that it will support multiple, simultaneous communications channels through Frequency Division Multiplexing (FDM). Some CATV (Community Antenna TeleVision) providers have upgraded their old coax systems to support broadband LAN communications. The coax systems were put in place to support multiple, downstream FDM analog TV channels. The upgrade supports bi-directional data channels for applications such as Internet access, LAN networking, and even POTS (Plain Old Telephone Service). Colleges and universities have upgraded their old CATV networks to broadband LANs, which were put in place to provide entertainment TV to the dormitories. Some theme parks have put them in place to support simultaneous audio, paging, closed-circuit TV and transaction processing. Contrast with Baseband. See also 10Broad36, CATV, FDM, and LAN.

**Broadband Bearer Capability** A bearer class field that is part of the initial address message.

**Broadband Personal Communications Standards** BPCS. Consists of 120 MHz of new spectrum available for new cellular networks. Also known as wideband PCS.

**Broadband Switching System** See BSS

**Broadcast** 1. To send information to two or more receiving devices simultaneously — over a data communications network, voice mail, electronic mail system, local TV/radio station or satellite system. Broadcast involves sending a transmission simultaneously to all members of a group. In the context of an intelligent communications network, such devices could be host computers, routers, workstations, voice mail systems, or just about anything else. In the less intelligent world of "broadcast media," a local TV or radio station might use a terrestrial antenna or a satellite system to transmit information from a single source to any TV set or radio capable of receiving the signal within the area of coverage. See also Narrowcasting and Pointcasting. Contrast with Unicast, Anycast and Multicast.

2. As the term applies to cable television, broadcasting is the process of transmitting a signal over a broadcast station pursuant to Parts 73 and 74 of the FCC rules. This definition is deliberately restrictive: it does not include satellite transmission, and it does not include point-to-multipoint transmission over a wired or fiber network. In spite of the fact that the broadcast industry and the cable television industry are forever bound together in a symbiotic relationship, they are frequently at odds over policy issues. See Broadcast Station. Compare with Cablecast.

**Broadcast Channel** BCCH. A wireless term for the logical channel used in certain cellular networks to broadcast signaling and control information to all cellular phones. BCCH is a logical channel of the FDCCH (Forward Digital Control CHannel), defined by IS-136 for use in digital cellular networks employing TDMA (Time Division Multiple Access). The BCCH comprises the E-BCCH, F-BCCH and S-BCCH. The E-BCCH (Extended-BCCH) contains information which is not of high priority, such as the identification of neighboring cell sites. The F-BCCH (Fast-BCCH) contains critical information which must be transmitted immediately; examples include system information and registration parameters. S-BCCH (System message-BCCH), which has not yet been fully defined, will contain messages for system broadcast. See also IS-136 and TDMA.

**Broadcast List** A list of two or more system users to whom messages are sent simultaneously. Master Broadcast Lists are shared by all system users and are set up by the System Administrator. Personal Lists are set up by individual subscribers.

**Broadcast Message** A message from one user sent to all users. Just like a TV station signal. On LANs, all workstations and devices receive the message. Broadcast messages are used for many reasons, including acknowledging receipt of information and locating certain devices. On voice mail systems, broadcast messages are important announcement messages from the system administrator that provide information and instructions regarding the voice processing system. Broadcast messages play before standard Voice Mail or Automated Attendant messages.

**Broadcast Net** A British Telecom turret feature that allows each trader single key access to a group of outgoing lines. This is designed primarily for sending short messages to multiple destinations. The "net" function allows the user to set up and amend his broadcast group.

**Broadcast Quality** A specific term applied to pickup tubes of any type — vidicon, plumbicon, etc. — which are without flaws and meet broadcast standards. Also an ambiguous term for equipment and programming that meets the highest technical standards of the TV industry, such as high-band recorders.

**Broadcast Station** An over-the-air radio or television station licensed by the FCC pursuant to Parts 73 or 74 of the FCC Rules, or an equivalent foreign (Canadian or Mexican) station. Cable television systems are authorized by FCC rules to retransmit broadcast stations; however, such retransmission is subject to a number of restrictions:

- The cable television operator is liable for copyright royalty fees collected by the Copyright Office.
- Under certain conditions, certain broadcast stations are eligible for mandatory carriage.
- Under certain conditions, the cable operator must obtain the permission of the licensee of the broadcast station. This term includes satellite-delivered broadcast "superstations" such as WGN-TV and WWOR, but it does not include:
- Satellite-delivered non-broadcast programming services (HBO, ESPN, C-SPAN, QVC, etc.).
- Video services delivered by terrestrial microwave systems such as MDS, MMDS, or ITFS, unless the actual signal being delivered was originally picked up from a broadcast station.
- Cablecasting programming originated by the cable operator or an access organization.

**Broadcast Storm** A pathological condition that may occur in a TCP/IP network that can cause a large number of broadcast packets to be propagated unnecessarily across an enterprise-wide network, thereby causing network overload. Broadcast storms happen when users mix old TCP/IP routers with routers supporting the new releases of TCP/IP protocol. Routers use broadcast packets to resolve IP addressing requests from stations on LANs. If a station running an old version of TCP/IP sends such a request, TCP/IP routers in an enterprise-wide network misunderstand it and send multiple broadcasts to their brother and sister routers. In turn, these broadcasts cause each router to send more broadcasts, and so on. This chain reaction can produce so many broadcast messages that the network can shut down. It should be noted that this is extremely rare and it happens only in TCP/IP networks that use two specific TCP/IP protocol releases.

**Broadcast Transmission** A fax machine feature that allows automatic transmission of a document to several locations.

**Broadwing** The name for the merged company comprising the old Cincinnati Bell Inc., a LEC (Local Exchange Carrier), and IXC Communications, an IXC (Interexchange Carrier) which acquired Cincinnati Bell. The merged company changed its name to Broadwing Inc. in 2000. Cincinnati Bell continues to operate as a LEC division of Broadwing. www.broadwinginc.com.

**Brochureware** A pejorative term for what companies can pull off with a clever copy writer, some nice graphics, and a bit of an advertising budget. Ever read a brochure and compared it to the product? You get the idea. See Webware.

**Broken Link** A link to a file that does not exist or is not at the location indicated by the URL. In short, you click on a hyperlink on a Web page you're viewing, but nothing happens or you get an error message. Bingo, broken link. You've been sent somewhere that doesn't exist. This is neither exciting, nor good programming.

**Broken Pipe** This term is usually seen in an error message by browser programs to let the user know that the stream of information which was downloading at the time has been forcibly cut. This can occur for many reasons, most commonly because you are on a very crowded network or your access provider is experiencing heavy traffic.

**Broken Record** In the 1960s, 1970s and 1980s there was an expression that you sound "like a broken record." This meant that you were repeating yourself. The expression came from the fact that when a needle got stuck in the groove of a vinyl record, the sound simply repeated itself. Then came the compact disc and the needle never got stuck in the groove since there was no needle. As a result, college kids today have idea what the expression "broken record" means, since most have never owned nor seen a record player.

**Broker** A company (or person) that buys and sells equipment often without taking ownership. A broker does not test or refurbish the equipment. Often, it never sees the equipment it buys and sells. Instead, it has the equipment shipped from the supplier to the customer, relying on the supplier to have tested and refurbished the equipment. Its specialty is knowing who has what equipment nationwide and selling it, possibly, at below-market price. See Secondary Equipment.

**Broker's Ally** A popular software application used by brokers for contact management.

**Brokernet** A virtual private dedicated network offering from New York Telephone and provided within Manhattan aimed at brokerage, banking and message industries. It uses digital switching to provide virtual private lines, specifically "hot line" service.

**NAK** 1. Negative AcKnowledgement. NAK is a control character in ASCII that means a packet arrived with the check digits in error. It is sent from the computer receiving the packets to the sender, implying that the packet should be retransmitted so that all bits will arrive intact in the next go-round. The binary code is 0101001. The hex code is 51. See Check Digits and ACK.
2. No Acknowledgement.

**Naked Call** An incoming call that is routed into an ACD queue without getting call menus or flexible routing.

**NAM** 1. Number Assignment Module. An electronic or module in a cellular phone which associates the MIN (Mobile Identification Number) with the ESN (Electronic Serial Number). Phones with dual or Multi-NAM features offer the user the option of having a cellular phone with more than one phone number.
2. National Account Manager.

**NAMAS** NAtional Measurement Accreditation Service.

**Name** A name, as opposed to an address, is a location independent description of an end-station or node on a network (LAN or WAN) that contains no information about where the name entity is located. Certain protocols, such as IBM NetBIOS, make extensive use of a naming scheme.

**Name Registration** A Windows 95 definition. The method by which a computer registers its unique name with a name server on the network. In a Microsoft network, a WINS server can provide name registration services.

**Name Resolution** Name resolution is the act of translating a name from a difficult to remember number to something easier. Most people find it easier to remember www.HarryNewton.com than 208.222.46.156. When you choose to go to a Web site (e.g. HarryNewton.com) or send an email to someone (e.g. BillG@Microsoft.com), your computer network (which may be the Internet) determines the appropriate IP address. This is done using a name server and/or a host table file. Name resolution is the process of mapping a name to the corresponding address. It is the process used on a network for resolving a computer address as a computer name, to support the process of finding and connecting to other computers on the network. See Name Server.

**Name Server** 1. An AIN (Advanced Intelligent Network) term. A directory service located in the SLEE (Service Logic Execution Environment) that provides a mapping between a resource's global name and its physical location in the network.
2. An electronic messaging term. A program which provides information about network objects, such as domains and hosts within a domain, by answering queries. See Name Resolution.

**Named Pipe** A connection used to transfer data between separate processes, usually on separate computers. Named pipes are the foundation of interprocess communications (IPC). An administrator can set permissions on named pipes, but only LAN Manager and network applications can create them. See also Named Pipes.

**Named Pipes** A technique used for communications between applications operating on the same computer or across the local area network. It includes an applications programming interface, providing application programmers with a way to create interprogram communications using routines similar to disk-file opening, reading, and writing. In Microsoft's words, named pipes allow two or more processes to communicate with each other. Any process that knows the name of a named pipe can access it (subject to security checks). See also Named Pipe.

**Naming Authority** An authority responsible for the allocation of names.

**NAMPS** Narrowband Analog Mobile Phone Service. A proposed new standard for cellular radio. NAMPS combines current voice processing with digital signaling. According to Motorola, NAMPS triples the capacity of today's cellular AMPS system, reduces the number of dropped calls and offers a range of new performance enhancements and digital messaging services. The other cellular standards include E-TDMA (Extended Time Division Multiple Access), TDMA (Time Division Multiple Access) and CDMA (Code Division Multiple Access).

**NANC** North American Numbering Council, pronounced "nancy." An industry council chartered by the FCC in October 1995 to assume administration of the NANP (North American Numbering Plan) from Bellcore, as well as to select LNP (Local Number Portability) administrators. The impartial council comprises 32 voting members from the carrier, manufacturer and end user communities. Another four non-voting members were selected, including representatives from Bellcore, ATIS, the U.S. NTIA, and the U.S. State Department. Ex-officio participants are selected from Canada, the Caribbean, and Bermuda. In October 1997, Lockheed Martin was selected as the primary administrator of NANP, formally replacing Bellcore. See also Bellcore, NANP and LNP.

**NANOG** North American Network Operators Group. A not-for-profit group for Internet network service providers of various descriptions. NANOG provides a forum for the exchange of technical information, promotes discussion of implementation issues that require community cooperation, and promotes and coordinates interconnection of networks within North America and to other continents. www.nanog.org. See also IOPS, Internet Society (ISOC) and IOPS.

**Nanometer** One billionth of a meter. Written nm. The nanometer is a convenient unit for describing the wavelength of light. The light spectrum extends from 750 nm (near infrared) to 390 nm (lowest energy ultraviolet). A nanometer is equal to 10 angstroms. A nanometer is also a millimicron.

**Nanosecond** One billionth of a second. Written nsec. It's ten to the minus 9. One nanosecond — a billionth of a second — is the speed at which transistors in today's computers turn on and off to represent the ones and zeros of binary logic and arithmetic. It is a time-duration so short that light, which can speed seven times around Earth in the second between our heartbeats, travels only one foot. See Picosecond.

**Nanotechnology** Nanotechnology describes many types of research where the characteristic dimensions are less than about 1,000 nanometers. Continued improvements in lithography have resulted in line widths that are less than one micron. This work is often called "nanotechnology." Submicron lithography is clearly very valuable (ask anyone who uses a computer!) but it is equally clear that lithography will not let us build semiconductor devices in which individual dopant atoms are located at specific lattice sites. Many of the exponentially improving trends in computer hardware capability have remained steady for the last 50 years. There is fairly widespread confidence that these trends are likely to continue for at least another ten years, but then lithography starts to reach its fundamental limits. If we are to continue these trends we will have to develop a new "post-lithographic" manufacturing technology which will let us inexpensively build computer systems with mole quantities of logic elements that are molecular in both size and precision and are interconnected in complex and highly idiosyncratic patterns. Nanotechnology will let us do this.





**NANP** North American Numbering Plan. Invented in 1947 by AT&T and Bell Telephone Laboratories. The NANP assigns area codes and sets rules for calls to be routed across North America (i.e. the US and Canada). The new one, put into effect in January, 1995 has one major change: The middle number in a North American area code no longer is required to be a 1 or a 0 (one or zero); rather, it can range between 0 and 9. NANP numbers are 10 digits in length, if the format NXX-NXX-XXXX. The first three digits are the NPA code (i.e., area code), the second three are the central office code or central office prefix, and the last four are the line number. NANP numbers conform to E.164, which is the ITU-T international standard for numbering plans. NANP administration was shifted from Bell Labs to Bellcore, when it was formed in 1986. Due to Bellcore's obvious conflict of interest, responsibility was shifted to NANC (North American Numbering Council) in 1995; it was shifted again in 1997 to Lockheed Martin. In November, 1999, if was shifted to NeuStar Inc., when it was discovered that Lockheed Martin had a conflict of interest. See North American Area Codes, North American Numbering Plan and NANC. www.nanpa.com.

**NANPA** North American Numbering Plan Administration. See also NANP and NANC.

**NAOM** National Accounts Operations Manager.

**NAP** 1. Network Action Point. An AT&T term describing the switching point through which a call is processed. The NAP switches the call based on routing instructions received from the NCP.
2. Network Access Point. A point of access into the Internet used by ISPs and providers of Internet regional and local subnets. NAPs operate at Layer 2 (Link Layer) of the OSI Reference Model, providing meet points where ISPs exchange traffic and routes. Similar to the original concept of the CIX (Commercial Internet eXchange), the NAPs provide a means of direct connection to the Internet, rather than serving solely as an intermediate point of exchanging commercial traffic. The initial NAPs were located in San Francisco under the operation of PacBell; Chicago, Bellcore and Ameritech, and New York (actually, Pennsauken, New Jersey), SprintLink. A fourth was awarded for MAE-East (MERIT Access Exchange) in Washington, DC, and is operated by MFS (Metropolitan Fiber Systems), which now is a business unit of Worldcom. On April 30, 1995, the NSFNet backbone was essentially shut down, and the NAP architecture effectively became the Internet. See also GigaPOP, FIX and MAE.
3. Network Access Point, an AIN term. See Network Acccess Point.
4. Network Access Provider. The NAP provides a transit network service permitting connection of service subscribers to NSPs. The NAP is typically the network provider that has access to the copper twisted pairs over which the DSL-based service operates.

**NAPI** Numbering/Addressing Plan Identifier.

**NAPLPS** North American Presentation-Level Protocol Syntax. A protocol for videotex text graphics and screen formats, developed by AT&T and since standardized within ANSI, based on Canada's Telidon videographics protocol.

**NAR** 1. Network Access Register. Centrex term describing a Central Office register which is required in order to complete a call involving access to the network outside the confines of that Centrex CO. NARs may be incoming, outgoing or two-way. NARs may be defined in support of local, intraLATA or interLATA traffic. The specifics of NAR implementation vary by Centrex provider.
2. Nothing Added Reseller. In contrast to a VAR, which is a Value Added Reseller.
3. National Accounts Representative.

**Narrative Traffic** Messages normally prepared in accordance with standardized procedures for transmission via optical character recognition equipment or teletypewriter. In contrast to data pattern traffic, narrative messages must contain additional message format lines.

**Narrowband** 1. An imprecise term. Some people think it's sub-voice grade channels capable of only carrying 100 to 200 bits per second. Others think it means lines or circuits able to carry data up to 2400 bits per second. So as lines get broader, narrowband gets broader. The latest definition of narrowband is up to and including T-1 — or 1.544 megabits per second. See also Bandwidth, Wideband, Broadband, N-ISDN and B-ISDN.
2. In cellular radio terminology, narrowband refers to the methodology of gaining more channels (and hence more capacity) by splitting FM channels into channels that are narrower in bandwidth. See NAMPS and NTACS.
3. PCS. Mobile or portable radio services which can be used to provide services to both individuals and businesses such as acknowledgement and voice paging and data services.

**Narrowband Advanced Mobile Phone Service** NAMPS. Narrowband AMPS. NAMPS triples the capacity of AMPS, by compressing three 10 KHz analog FM channels into a signal 30 kHz analog FM AMPs channel, along with improved signaling. Pronounced "N-AMPS."

**Narrowband FM** Narrowband FM is an FM signal with a bandwidth approximately equal to that of an AM signal modulated with the same audio information. Narrowband FM is used on many emergency bands because it conserves bandwidth while being clear and free from static.

**Narrowband ISDN** Any ISDN speed up to 1.544 Mbps, which is called PRI or PRA. But this definition is imprecise. And as speeds get faster, so the definition of narrowband ISDN means faster and faster. See N-ISDN and B-ISDN.

**Narrowband Signal** Any analog signal or analog representation of a digital signal whose essential spectral content is limited to that which can be contained within a voice channel of nominal 4-kHz bandwidth.

**Narrowband TACS** N-TACS. The narrowband version of TACS from Motorola which doubles the capacity of TACS by splitting the 25 kHz TACs channel into two 2.5 kHz channels.

**Narrowcasting** First, there was broadcasting. One signal went to many people. Radio and TV are the classic concepts of broadcasting. One signal — the same signal — to many people. Then came the idea of narrowcasting. One signal to a select number of people — maybe only those people who subscribed to the service and had the equipment to receive it. Then there came pointcasting. This is a fancy name for sending someone a collection of customized information — snippets of stuff that they chose from a palette of information offerings.

**NARS** 1. Network Audio Response System.
2. A Nortel switching term for Network Automatic Route Selection.

**NARTE** National Association of Radio and Telecommunications Engineers. A worldwide, non-profit, professional organization which certifies engineers and technicians in the areas of telecommunications and electromagnetic compatibility (EMC). NARTE was founded in 1983 to address the professional testing and certification void created when the FCC reduced its role in that regard. www.narte.org

**PNNI Routing Domain** An ATM term. A group of topo-ogically contiguous systems which are running one instance of PNNI routing.

**PNNI Routing Hierarchy** An ATM term. The hierarchy of peer groups used for PNNI routing.

**PNNI Topology State Element** An ATM term. A col-ection of PNNI information that is flooded among all logical nodes within a peer group.

**PNNI Topology State Packet** An ATM term. A type of PNNI Routing packet that is used for flooding PTSEs among ogical nodes within a peer group.

**PNM** Public Network Management.

**PNO** Public Network Operator. Usually a PTT of some sort. See PTT.

**PnP** Plug and Play. The technology that lets Windows 95 and oon other operating systems automatically detect and con-gure most of the adapters and peripherals connected to or itting inside a PC. A fully Plug and Play-enabled PC requires hree PnP pieces: a PnP BIOS, PnP adapters and peripherals, nd a PnP operating system. Adding a PnP-compliant CD-ROM drive, hard disk, monitor, printer, scanner, or other device to a PnP PC means little more than making the physi-al connection. The operating system, together with PnP logic present in the BIOS and in the device itself, handles the IRQ ettings, I/O addresses, and other technical aspects of the nstallation to make sure that the thing will work. The idea of PnP is to make installation of complex gadgets — such as ound cards and modems — easy, taking care of the major ane of everyone's life: That your new device now conflicts ith an old device, effectively killing both devices and maybe ashing your PC at the same time. PnP is a great idea. Its ccess has been slow in coming, because so many devices e not PnP compatible.

**PNS** Personal Number Service is a new concept in telecom-unications that assigns a telephone number to a person, not location, effectively allowing a subscriber to use one num-er for all calls and helping them manage their incoming mmunications. The service does not require the user to ange any existing phone numbers. The subscriber simply ovides the various numbers — office, cellular, pager, fax d home — and instructions on where and when the calls ould be routed, and the PNS directs the calls in the order quested by the subscriber.

**POI** Point of Origin. It is used in relationship with a Message ansfer Agent (MTA).

**POC** Points of Contact. The person or persons identified in a cord. Sometimes this information is referred to as "Person bjects." See also InterNIC.

**ocket Bongo** Picture a group of people. Suddenly, some-ing on someone beeps. But the someone doesn't know (or etends not to know) which of the many wireless devices he's rrying that is bleating. Is it the cell phone? Or the pager? Or e PCS phone? The person starts patting himself all over, th mock embarrassment. But his look screams, "I'm wired d I'm proud." His behavior is called "pocket bongo." I read out pocket bongo first in an article by Joan Hamilton in the bruary 15, 1999 issue of Business Week. The article was adeed, "We've got a bad case of digital gizmosis."

**POCSAG** One of the communications protocols used tween paging towers and the mobile gers/receivers/beepers themselves. Other protocols are LAY, ERMES, FLEX and REFLEX. The same paging tower uipment can transmit messages one moment in POCSAG d the next moment in ERMES, or any of the other protocols.

**PODP** Public Office Dialing Plan.

**Podiumware** You're presenting a great speech detailing some great new concept in hardware or software. You don't have many precise details, except your vague words. This is called podiumware. When your thinking has become more concrete, and you make slides on your new hardware or software, you have moved to slideware. Eventually when you announce your new hardware or software, you have moved to hypeware or vaporware. I was first introduced to the word "podiumware" by Bob Lewis, a columnist for InfoWorld Magazine. See also Hookeware, Hyperware, Meatware, Podiumware, Shovelware, and Vaporware.

**POF** Plastic Optic Fiber. A fiber optic transmission medium made from plastic, rather than glass. Glass clearly (double entendre intended) performs better than plastic, as it offers less attenuation and, therefore, better transmission quality at higher speeds and over longer distances. Plastic, however, is less expensive and less susceptible to breakage. Plastic Optic Fiber (POF) uses low-quality light sources and carry data at speeds greater than 10 Mbps over distances up to 100 meters. POF is evolving as a replacement for twisted-pair copper wire.

**POFS** Private Operation Fixed Systems. Microwave incumbents in the 2.0 Ghz band. Must be relocated with comparable alternative facilities funded.

**POGO** Post Office Goes Obsolete. When MCI Mail was originally being planned, its code name was POGO. The idea was obvious. In September of 1994, I asked MCI what "POGO" meant and they answered: "Pogo" is an internal message format used by MCI for coding purposes.

**POH** Path OverHead. SONET overhead assigned to and transported with the payload until the payload is demultiplexed. It is used for functions that are necessary to transport the payload; i.e., end-to-end network management. These functions include parity check and trace capability. It is not implemented in SONET Lite.

**POI** Point Of Interface. The physical telecommunications interface between the LATA access and the interLATA functions. A POI is a demarcation point between LEC and a Wireless Services Provider (WSP). This point establishes the technical interface, the test point(s) and the point(s) for operational division of responsibility. See also Point of Presence.

**Point Code** A SS7 term for a unique code which identifies a network node in order that the SS7 network can route calls properly. When placing a call, you dial a Global Title in the form of dialed digits (i.e., a telephone number). Those digits are translated from the Global Title to a Point Code by the STP (Signal Transfer Point) through a process known as Global Title Translation (GTT). See also Global Title, Global Title Translation, SS7, and STP.

**Point In Call** PIC. A representation of a sequence of activities that the ASC (AIN Switch Capabilities) performs in setting up and maintaining a basic two-party call. PICs occur in Originating and Terminating BCSMs (Basic Call State Model).

**Point of Demarcation** Physical point at which the phone company's responsibility for the wiring of the phone line ends.

**Point Of Interface** POI. The physical telecommunications interface between the LATA access and the interLATA functions. A POI is a demarcation point between LEC and a Wireless Services Provider (WSP). This point establishes the technical interface, the test point(s) and the point(s) for operational division of responsibility.

**Point Of Presence** POP. A physical place where a carrier has a presence for network access, a POP generally is in the form of a switch or router. For example, an large IXC will have a great many POPs, at which they interface with the LEC networks to accept originating traffic and deliver terminating long distance traffic. The basis on which the interface is accomplished can include switched and dedicated (leased line) connections. Similarly, providers of X.25, Frame Relay and ATM services have specialized POPs, which may be collocated with the circuit-switched POP for voice traffic. A POP also is a meet point for ISPs (Internet Service Providers), where they exchange traffic and routes. See also GIGAPOP and POP.

**Point Of Purchase Politics** Politically correct shopping or cause-related marketing, such as that advocated by Benetton or Ben and Jerry's.

**Point Of Sale Terminal** A special type of computer terminal which is used to collect and store retail sales data. This terminal may be connected to a bar code reader and it may query a central computer for the current price of that item. It may also contain a device for getting authorizations on credit cards.

**Point Of Termination** POT. The point of demarcation within a customer-designated premises at which the telephone company's responsibility for the provision of access service ends.

**Point Size** The height of a printed character specified in units called points. A point equals 1/72 inch. Also known as font size.

**Point To Multipoint** A circuit by which a single signal goes from one origination point to many destination points. The classic example is a TV signal (say a Home Box Office program) being broadcast from one satellite to many CATV subscribers all around the country. Not to be confused with a multi-drop circuit. See Point to Point Multipoint Connection.

**Point To Multipoint Connection** A Point-to-Multipoint Connection is a collection of associated ATM VC (Virtual Channel) or VP (Virtual Path) links, with associated endpoint nodes, with the following properties:

1. One ATM link, called the Root Link, serves as the root in a simple tree topology. When the Root Node sends information, all of the remaining nodes on the connection, called Leaf Nodes, receive copies of the information.
2. Each of the Leaf Nodes on the connection can send information directly to the Root Node. The Root Node cannot distinguish which Leaf is sending information without additional (higher layer) information. (Note: UNI 4.0 does not support traffic sent from a Leaf to the Root.)
3. The Leaf Nodes cannot communicate directly to each other with this connection type. See ATM.

**Point-to-Multipoint Delivery** Delivery of data from a single source to several destinations.

**Point-To-Point** A private circuit, conversation or teleconference in which there is one person at each end, usually connected by some dedicated transmission line. In short, a connection with only two endpoints. See also Point-To-Multipoint.

**Point-To-Point Connection** An uninterrupted connection between one piece of equipment and another.

**Point-To-Point Delivery** Delivery of data from a single source to a single destination.

**Point-To-Point Protocol** PPP. An 8-bit serial interconnection protocol which allows a computing device, such as a PC, to connect as a TCP/IP host to a network through an asynchronous port. PPP commonly is used for connection across the PSTN from a PC to an ISP for purposes of Internet access. PPP is the successor to SLIP (Serial Line Internet Protocol). PPP provides router-to-router and host-to-network connections over both synchronous and asynchronous circuits. PPP includes error detection and data protection features, unlike SLIP and other protocols. See also SLIP.

**Point-To-Point Signaling** A signaling method where signals must be completely received by an intermediate station before that station can set up a call connection. See End to End Signaling.

**Point-To-Point Topology** A network topology where one node connects directly to another node.

**Point-To-Point Tunneling Protocol** PPTP. Part of the VPN suite, a protocol by which tunnels are established and terminated over the Internet. An alternative to IPsec, L2TP, SOCKSv5 tunneling protocols. See PPTP for more detail.

**Pointcasting** First, there was broadcasting. One signal went to many people. Radio and TV are the classic concepts of broadcasting. One signal — the same signal — to many people. Then came the idea of narrowcasting. One signal to a select number of people — maybe only those people who subscribed to the service and had the equipment to receive it. Then there came pointcasting. This is a fancy name for sending someone a collection of customized information — snippets of stuff that they chose from a palette of information offerings.

**Pointer Processing** Pointer processing accommodates frequency differences by adjusting the starting position of the payload within the frame. A pointer keeps track of the starting position of the payload.

**Points of Contact** The person or persons identified in a record. Sometimes this information is referred to as "Person Objects." See also InterNIC.

**Points Of Failure** A simple term to indicate that in a complex network there are many places things can go wrong. Those places need to be identified so that you can anticipate and plan for things to go wrong.

**Poisson** See Poisson Distribution.

**Poisson Distribution** A mathematical formula named after the French mathematician S. D. Poisson, which indicates the probability of certain events occurring. It is used in traffic engineering to design telephone networks. It is one method of figuring how many trunks you will need in the future based on measurements of past calls. Poisson distribution describes how calls react when they encounter blockage (see QUEUING THEORY for a detailed explanation of blockage). There are two main formulas used today in traffic engineering: Erlang B and Poisson. The Erlang B formula assumes all blocked calls are cleared. This means they disappear, never to reappear. The Poisson formula assumes no blocked calls disappear. The user simply redials and redials. If you use the Poisson method of prediction, you will buy more trunks than if you use Erlang B. Poisson typically overestimates the number of trunks you will need, while Erlang B typically underestimates the number of trunks you will need. There are other more complex but more accurate ways of figuring trunks — Erlang C (blocked calls delayed or queued) and computer simulation. Poisson has been used extensively by AT&T to recommend to its customers the number of trunks they needed. Since AT&T was selling the circuits and preferred its customers to have excellent service, it made sense to use the Poisson formula. As competition in long distance has heated up, as circuits have become more costly and as companies have become more economically-minded (more aware of their

**ATC** Mobile Terminating Call. Mobile phone receiving the ıbound leg of a call. See also MTO.
**ATD** Memory Technology Drive.
**ATIE** Maximum Time Interval Error.
**ATM** 1. Maintenance Trunk Monitor.
Mean Time Maintenance.
**ATP** Message Transfer Part of the SS7 Protocol. It provides ınctions for basic routing of signaling messages between ignaling points. It is Level 1 through 3 protocols of the SS7 rotocol stack. MTP 3 (Level 3) is used to support BISUP.
**ATS** 1. Message Telecommunications Service. AT&T's name ɔr standard switched telephone service. Also called DDD, for lirect Distance Dial.
Member of the Technical Staff. A common term at AT&T lell Labs, Bellcore and other R&D labs.
: Microsoft Terminal Server. Microsoft's answer to a dumb ɛrminal.
I. Measured Toll Service.
. Material Transfer System.
**ATSO** Mobile Telephone Switching Office. This central office ıouses the field monitoring and relay stations for switching alls between the cellular and wire-based (land-line) central ıffice. The MTSO controls the entire operation of a cellular ystem. It is a sophisticated computer that monitors all cellu- ar calls, keeps track of the location of all cellular-equipped ehicles traveling in the system, arranges handoffs, keeps rack of billing information, etc.
**ATTR** Mean Time to Repair. The average time required to eturn a failed device or system to service.
**TU** 1. Maximum Transmission Unit. The largest possible ınit of data that can be sent on a given physical medium. xample: The MTU of Ethernet is 1500 bytes.
. Multi Tenant Unit. A fancy name for a building or group of ıuildings that house multiple sets of businesses. This could ɛ an office building, office park or corporate campus, med- ɛal facility, hotel or college dormitory. Those tenants may be usiness or residence, or a mix of both. The reason we've oined this term is that the new newer carriers (such as the LECs) talk about providing service to MTUs. They talk about lacing a DSL access router (also called a DSLAM) in an ATU environment, service providers have immediate access ɔ the building's existing copper wiring (the copper was ıstalled when the building was built and/or renovated to sup- ort telephone lines). DSL allows high-speed data transmis- ion (typically for access to the Internet) over that existing iring to and from all customers inside the MTU.
**MU** Monitoring Unit. A wireless telecommunications term. levices added to circuit configurations that use sophisticated ending rules with fault and topology information to deter- ıine potential outages.
**Mu Law** The PCM voice coding and companding standard sed in Japan and North America. A PCM encoding algorithm here the analog voice signal is sampled eight thousand mes per second, with each sample being represented by an ght bit value, thus yielding a raw 64 Kbps transmission rate. sample consists of a sign bit, a three bit segment specify- ıg a logarithmic range, and a four bit step offset into the ınge. All bits of the sample are inverted before transmission. ee A Law and PCM.
**MUA** An acronym for Mail User Agent, is the end user's mail ɔgram, like Eudora.
**MUD** Multi-User Dungeons. A term that Time Magazine in its 13/1993 issue called "the latest twist in the already some- hat twisted world of computer communications." Time called it "a sort of poor man's virtual reality" — created by using words, not expensive head-mounted displays. The first MUD apparently was invented in 1979 as a way for British universi- ty students to play the fantasy game Dungeons & Dragons by networked computers. MUD are basically now online games environments that use a great deal of network bandwidth.
**Mudbox** An unsheltered item of equipment that is sufficiently rugged to withstand adverse environments. It is expected to work perfectly though it sits outdoors in good and bad weather.
**MUDS** Multi-User Dungeons. A cyberspace term. MUDS are elaborate fictional gathering places that users create one room at a time. All these "spaces" have one thing in common, according to cyberspace wisdom, they are egalitarian. Anybody can enter the rooms (provided he has the correct equipment) and everybody is afforded the same level of respect. A significant feature of most MUDs is that users can create interactive objects that remain in the program after they leave. MUD worlds can be built gradually and collectively. See also USENET.
**MULDEM** A contraction for Multiplexer Demultiplexer, referring to a piece of equipment which performs both functions and generally operates between two of the AT&T digital hierarchy rates (i.e., DSI to DS3).
**Mule Tape** Mule tape is very strong, flat tape which is used to pull cable through underground conduit. Here's how it typically works: First, you use a bore to make an underground hole. Then you fill that hole with hollow concrete cement pipes joined together to form one long underground conduit (i.e. tunnel). Then you go to one end of the tunnel and use a air compressed device to blow a very lightweight "birdie" attached to a lightweight string through the tunnel. Someone at the other end catches the birdie and pulls gently on the string. Attached to the end of the string is strong mule tape. He keeps pulling on it. Attached to the end of the mule tape is the telecommunications cable — fiber or wire — that you really want to instal in the underground conduit. The whole point of this elaborate procedure is that it's far better for the cable to lay it after the pipes are laid than it is during the installation process when the cable could be damaged.
**Multi Channel Aggregation** A feature under Windows NT which gives remote users the option of using two phone lines for the same remote session. This way you double bandwidth, thus making their session go twice as fast.
**Multi Vendor Integration Protocol** See MVIP.
**Multi Wavelength Optical Repeater** See MOR.
**Multi-** In this dictionary, I include a dash between words beginning with "multi" and ending with something else. See below for examples.
**Multi-Access** The ability of several users to communicate with a computer at the same time with each working independently on their own job.
**Multi-Address Calling Facility** A system service feature that permits a user to nominate more than one addressee for the same data. The network may accomplish this sequentially or simultaneously.
**Multi-Alternating Routing** Alternate routing with provision for advancing a call to more than one alternate route, each of which is tested in sequence in the process of seeking an idle path. A Bellcore definition.
**Multi-Carrier Modulation** MCM. A technique of transmitting data by dividing the data into several interleaved bit streams and using these to modulate several carriers. MCM is a form of frequency division multiplexing.





**Multi-Cast** The broadcast of messages to a selected group of workstations on a LAN, WAN or the Internet. Multicast is communication between a single device and multiple members of a device group. For example, an IPv6 router might address a series of packets associated with a routing table update to a number of other routers in a LAN internetwork. Similarly, a LAN-attached workstation might address a transmission to a number of other LAN-attached devices. Companies are discovering they can distribute material to large numbers of employees and others on their intranets more efficiently using multicast than they can by sending such material in separate bursts to each user. In multicast mode, routers distribute a given file to all hosts that have signaled they want to receive the material, using the Class D addresses of the IP addressing hierarchy. See See Multi-Cast Packets and IPV6. Contrast with Unicast, Anycast and Broadcast.
**Multi-Cast Packets** Multi-cast packets are addressed to multiple devices within a group of devices. For example, LAN stations use multi-cast packets to deliver information to a specific set of devices such as routers, file servers, and hosts. See Multi-Cast.
**Multi-Cast User Message** A user message generated at the source node and distributed to two or more destination nodes.
**Multi-Casting** The ability of one network node to send identical data to a number of end points - known as broadcast in other circles; one example is if new software or addressing updates need to be distributed to all users; also, a point-to-multipoint video transmission is a multi-cast operation.
**Multi-Channel** The use of a common channel to make two or more channels either by splitting the frequency band of the common channel into several narrower bands (called frequency division multiplexing) or by allocating time slots in the entire channel (time division multiplexing).
**Multichannel Microwave (or Multipoint) Distribution Service** MMDS. An FCC name for a service (operating in the frequency range 2150-2162 MHz and 2500-2686 MHz) where multiple NTSC video channels are broadcast within a limited geographic area (typically 25 mile radius from single omnidirectional antenna). Often called "wireless cable" service.
**Multi-Conductor** More than one conductor within a single cable complex.
**Multi-Domain Network** In IBM Systems Network Architecture technology, a network that contains more than one host based System Services Control Point (SSCP).
**Multi-Drop** A multi-drop private line or data line is a communications path between two or more locations requiring two or more LECs, but there are multiple 'drops' per LEC. For example, a hospital in Detroit has a data line going to NY, NY. But in New York, NY there are four hospitals in a several block area. Therefore, one data line with four drops. Then you can have a multipoint - multidrop line, which is a combination of both. This explanation courtesy of Robert.Chatters@MCI.COM
**Multi-Drop Line** A communications channel that services many data terminals at different geographical locations and in which a computer (node) controls utilization of the channel by polling one distant terminal after another and asking it, in effect, "Do you have anything for me?"
**Multi-Fiber** A fiber that supports propagation of more than one of a given wavelength. See Multi-Mode.
**Multi-Frame** In PCM systems, a set of consecutive frames in which the position of each frame can be identified by reference to a multi-frame alignment signal. The multi-frame alignment signal does not necessarily occur, in whole or in part, in each multi-frame.
**Multi-Frequency Monitors** Also known as multisync or multiscan monitors. They can show images in several resolution standards. Such versatility makes them more expensive than single-resolution monitors (e.g. a standard VGA) but also less prone to instant obsolescence. A multisync monitor showing a VGA may or may not look better than VGA monitor showing a VGA image. That depends on the screen's other attributes.
**Multi-Frequency Pulsing** An in-band address signaling method in which ten decimal digits (the numbers on the touchtone pad) and five auxiliary signals are each represented by selecting two frequencies and combining them into one "musical" sound.. The frequencies are selected from six separate frequencies — 700, 900, 1100, 1300, 1500 and 1700 Hz. See also Captain Crunch.
**Multi-Frequency Signaling** MF. A signaling code (utilizing pairs of frequencies in the 700-1700 Hz range) for communications between network switches. Code includes 10 digits and special auxiliary signals.
**Multi-Function Peripherals** MFS. These are devices which take on two or more functions generally associated with individual peripherals and combine these into one product or in a linker series of modules. A multi-function peripheral might combine a fax machine with a photocopier with a computer printer with a scanner. The term is not very precise, but it tends increasingly to mean a computer device that will print, photocopy, fax and/or scan.
**Multi-Homed Host** A computer connected to more than one physical datalink. The data links may or may not be attached to the same network.
**Multi-Hop** An example of a single hop system is a microwave system between one building (let's say downtown San Francisco) and another across town (let's say uptown San Francisco). Each with one microwave antenna on its roof. Let's say we wanted to extend that system to Oakland. We'd put a second antenna on the uptown San Francisco building and shoot across to an antenna in Oakland. That building would now have a multi-hop transmission system.
**Multi-Hosting** The ability of a Web server to support more than one Internet address and more than one home page on a single server. Also called Multi-Homing.
**Multi-Leaving** In communications, the transmission (usually via bisync facilities and using bisync protocols) of a variable number of data streams between user devices and a computer.
**Multi-Level Precedence Preemption** MLPP. A system in which selected customers may exercise preemption capabilities to seize facilities being used for calls with lower precedence levels.
**Multi-Line Hunt** The ability of switching equipment to connect calls to another phone in the group when other numbers in the group are busy.
**Multi-Line Telephone** Any telephone set with buttons which can answer or originate calls on one or more central office lines or trunks. Originally all multi-line telephones were 1A2 and they came in sizes of 2, 3, 5, 9, 11, 17, 19, 29, and 60 lines. Now, skinny wire electronic key systems come in all sizes. See Key Telephone System.
**Multi-Line Terminating System** Premises switching equipment and key telephone type systems which are capable of terminating more than one local exchange service line, WATS access line, FX circuit, etc.

of splicing chambers, connecting sections of conduit and the cables which run though them.

**Underlap** In facsimile, a defect that occurs when the width of the scanning line is less than the scanning pitch.

**Underlying Carrier** A common carrier providing facilities to another common carrier which then provides services to end users.

**Underrun** A network error indicating that buffer checks show the buffer as empty. Underrunns shouldn't happen in a well managed network. An underrun is often a synchronization problem.

**Understaffing Limit** A call center term. The percentage by which you'll allow the scheduling process to fall short of the required staffing level in any period. This typically provides more economical coverage during the least-busy periods of the day.

**Underwriters Laboratories, Inc.** A non-profit laboratory which examines and tests devices, materials and systems for safety, not for satisfactory operation. See UL for a longer explanation.

**Undesired Signal** Any signal that tends to produce degradation in the operation of equipment or systems.

**Undetected Error Ratio** The ratio of the number of bits, unit elements, characters, or blocks incorrectly received and undetected, to the total number of bits, unit elements, characters, or blocks sent.

**Undirected Pickup** A phone system feature. Undirected Pickup lets you pickup any call ringing at any extension in the pickup group in which your extension is a member. The pickup groups are pre-programmed in the switch.

**Undisturbed Day** A day in which the sunspot activity or ionospheric disturbance does not interfere with radio communications.

**UNE** (pronounced you-need). Unbundled Network Element. The Telecommunications Act of 1996 requires that the ILECs (Incumbent Local Exchange Carriers) unbundle their NEs (Network Elements), which must be made available to the CLECs (Competitive LECs) on the basis of incremental cost. This means that CLECs will pay the additional costs the ILECs incur in making these facilities available. the words "incremental cost" are meant to signal to the ILECs that they are not to inflate the price of these facilities by adding overhead costs (e.g. the salary of the ILEC's people in charge of investor relations). UNEs are defined as physical and functional elements of the network, e.g., NIDs (Network Interface Devices), local loops, switch ports, and dedicated and common transport facilities. When combined into a complete set in order to provide an end-to-end circuit, the UNEs constitute a UNE-P (UNE-Platform). Unbundled Network Elements is a term used in negotiations between a CLEC (Competitive local Exchange Carrier) and the ILEC (Incumbent Local Exchange Carrier) to describe the various network components that will be used or leased by the CLEC from the ILEC. These components include such things as the actual copper wire to the customers, fiber strands, and local switching. The CLEC will lease these UNEs with pricing based on the previously-signed Interconnection Agreement between the CLEC and the ILEC. Typically, a CLEC will colocate a switch at the ILEC's wirecenter, then pay for the "unbundled" local loop to make a connection to the customer. Alternately, a CLEC might lease both an unbundled local loop and an unbundled switch, and make a connection to their network at the LEC's switch. See CLEC, ILEC, the Telecommunications Act of 1996, UNE Rate and UNE-P.

**UNE Rate** The fee, set by state regulators, that an ILEC charges a CLEC to unbundle network elements as part of making the local exchange market competitive. Rebundling is the process of putting UNEs back together by a CLEC to become part of a competitive service offering by him to a customer.

**UNE-P** Unbundled Network Element-Platform. See UNE.

**Unequal Access** Refers to long distance phone companies who do not take advantage of Judge Harold Greene's Equal Access divestiture provisions. Rather than a carrier selection code, unequal access carriers require you to dial a local seven digit number and punch in an authorization code. If the carrier elected to pay for Equal Access, you would just dial directly the same 10 digits you do today, and your local telephone company would give your billing number to your long distance company.

**Unerase** A command for getting back files you've accidentally erased. See MS-DOS.

**Ungrounded** Not connected to ground. PBXs, key systems and other phone systems will not work well when not connected to a solid ground because they have no place to send high voltage spikes (static electricity, lightning strikes, etc.) Improper grounding is probably the most common cause of phone system faults. Our feeling: the better the ground, the better the phone system performance. One way of grounding is the third wire of an electrical outlet. This may be OK if you check where that wire is ultimately connected to. You can ground to the metal cold water pipe. But that may connect to a plastic PVC pipe one floor below. Best to check. A ground ultimately ending firmly routed a dozen feet below the ground is best.

**UNH IOL** University of New Hampshire Interoperability Lab. A testing organization affiliated with the Research Computing Center of the University of New Hampshire which tests FDDI products for vendor interoperability.

**UNI** User Network Interface. Specifications for the procedures and protocols between user equipment and either an ATM or Frame Relay network. The UNI is the physical, electrical and functional demarcation point between the user and the public network service provider. By way of example, the Frame Relay UNI involves both the user's FRAD (Frame Relay Access Device) and the carrier's FRND (Frame Relay Network Device) across a dedicated link. The ATM (Asynchronous Transfer Mode) UNI was developed and is promoted by the ATM Forum; the Frame Relay UNI, by the Frame Relay Forum.

**UNI A** User Network Interface A. A B-ISDN term for a SONET OC-3 link from the network to the premise, operating at 155 Mbps.

**UNI B** User Network Interface B. A B-ISDN term for a SONET OC-12 link from the network to the premise, operating at 622 Mbps.

**UNI Interface** See UNI.

**UNIBOL** A UNIX version of COBOL.

**Unicast** The communication from one device to another device over a network. In other words, a point-to-point communication. When you're Web browsing on the Internet or sending and receiving email, you are unicasting. In ATM, for instance, Unicast describes the transmit operation of a single PDU (Protocol Data Unit) by a source interface where the PDU reaches a single destination. A PDU, by the way, is a single set of data which may be in the form of a block or frame of data comprised of a fixed number of bits, as well as control information; the specifics of the PDU vary according to the nature of the native protocol which governs the process of communications between networked devices. By way of another example, the new IPv6 (Internet Protocol, version 6)





specification, supports Unicast, as well as Anycast and Multicast. Contrast with Anycast, Broadcast, IP Multicast and Multicast.

**Unicasting** 1. Communicating from one device to another. In contrast, multicasting sends one stream of information to many. See Unicast.

2. As an ATM term, it is the transmit operation of a single PDU by a source interface where the PDU reaches a single destination.

**Unicode** Unicode is a 16 bit system for encoding letters and characters of all the world's languages. At 16 bits it can encode 65,536 characters. That's two raised to the 16th power. Work it out:

Multiply 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2. Sixteen-bit characters (like Unicode) are also called Wide Characters. The first 128 codes of Unicode are identical to ASCII. Just add another zero byte to each ASCII character to convert to Unicode. Unicode contains over 20,000 Han characters, which are used to represent whole words or concepts in Chinese, Japanese and Korean. Unicode was developed by the Unicode Inc. consortium as a standard to replace the various proprietary 16-bit coding techniques which comprised two 8-bit bytes linked together. At the same time that Unicode was being developed, another standard was being developed jointly by the ISO and IEC. In 1992, the two coding schemes were linked to become what is known as both Unicode and BMP. See also BMP.

**Unidirectional** The transmission of information in one direction only.

**Unidirectional Bus** A distribution conductor or set of conductors that can transfer information in one direction only.

**Unidirectional Path Switched Ring** UPSR. A SONET transport method in which working traffic is transmitted in one direction. UPSR is preferred for interconnected rings with numerous signals crossing the rings.

**Unified Messaging** Also called integrated messaging. You walk into your office in the morning. You turn on your PC and load up your messaging software, e.g. Microsoft Outlook. That's the software you typically use to receive and send emails. Only today, you notice that instead of seeing only emails awaiting your reading pleasure, you also see faxes and voice mails received by your telephone system. You can seem them all in one list. You can sort them by when you received them, or whom they're from or how big they are. You can click on your email and fax messages and read them on screen. You can click on your voice mail messages and hear them through your computer's speakers. Some unified messaging systems also allow you to call in and have your phone system read you your email messages, using text to speech, and, of course, listen to your voice mail messages over the phone or dialing in from afar. What's happened is that your company has acquired a server (big computer) whose job is to collect all your mail from its various places and consolidate them into one inbox. It may collect your email from various POP3 email servers (some distant and some local), from your fax server and from your voice mail server, which will be attached to your company's PBX telephone system. Once collected, it simply "serves" these messages up to you when you log in. See Integrated Messaging.

**Unified Voice** Unified voice is a bundled service that is provided via a T-1 line. It is designed to provide line side business telephone features similar to a LEC (Local Exchange Carrier) — Hunting, call forwarding, voice mail, call waiting, call blocking and conferencing. The typical UV customer will not have a PBX but may have a key system at his offices. In the old days, they used to call unified voice Centrex, with the difference that unified voice also uses the Internet, where Centrex never did.

**Uniform Access Number** See UNISERV.

**Uniform Call Distributor** UCD. A device for distributing many incoming calls uniformly among a group of people (typically called "agents" because of the early use of these machines by the airline, hotel and car reservation industry). These days the term Uniform Call Distributor is falling into disrepute as the newer term, Automatic Call Distributor comes in. According to incoming call experts, a Uniform Call Distributor is generally less "intelligent," and therefore less costly than an ACD. A UCD will distribute calls following a predetermined logic, for example "top down" or "round robin." It will not typically pay any heed to real-time traffic load, or which agent has been busiest or idle the longest. Also, a UCD's management reports tend to be rudimentary, consisting of simple pegs counts, as opposed to an ACD, which can produce reports on the productivity of agents.

**Uniform Call Distributor** UCD. A device located at the telephone office or in a PABX that distributes incoming calls evenly among individuals; called a "call sequencer" in some non-Bell LECs.

**Uniform Encoding** An analog-to-digital conversion process in which, except for the highest and lowest quantization steps, all of the quantization subrange values are equal.

**Uniform Linear Array** An antenna composed of a relatively large number of usually identical elements arranged in a single line or in a plane with uniform spacing and usually with a uniform feed system.

**Uniform Numbering Plan** A uniform seven-digit number assignment made to each phone in a private corporate network. Such a plan allows routing of calls to distant phones from any on-net telephone without any differences in the dialed number. Without a uniform numbering plan, you would dial your boss in New York differently if you were in the company's Chicago office and differently again if you were in your company's San Francisco office. With a uniform numbering plan, it would be the same from all locations. The nation's long distance network has, obviously, a uniform numbering plan.

**Uniform Resource Locator** URL. An Internet term. A standardized way of accessing various resources on the World Wide Web. See URL for a detailed explanation. I believe the correct term is Universal Resource Locator, not Uniform Resource Locator. See URL for a detailed explanation.

**Uniform Service Order Code** See USOC.

**Uniform-Spectrum Random Noise** The laboratory name for "white noise," a test signal made of noise that is constant in its power for every unit of bandwidth; used to test the crosstalk characteristics of multichannel analog transmission systems.

**UNII** See U-NII above.

**Unimodem** Unimodem, the "Universal Modem Driver" for Windows 95 and now Windows NT Server 4.0 and Windows NT Workstation 4.0, is both a TAPI service provider and a VCOMM device driver. It translates TAPI (Windows Telephony API) function calls into AT commands to configure, dial, and answer modems. See AT COMMAND SET and UNIMODEM V. See the following for Unimodem specifics:
http://207.68.137.34/ntserver/communications/unimodem.htm

**Unimodem V** Unimodem stands for Universal Modem Driver. Unimodem V is Unimodem updated for voice. The V stands for voice, not five. It now replaces Unimodem.